

1. An airbag inflator diffusion system comprising:  
an airbag inflator having an exhaust gas exit port;  
a sleeve configured to receive the inflator and secure the inflator within the sleeve,  
the sleeve being configured to expand radially under a force of impinging exhaust gas  
5 from the exit port to form an exhaust passage between the inflator and the sleeve.

2. An airbag inflator diffusion system, as in claim 1, wherein the sleeve  
comprises a solid section configured to receive direct impingement of the exhaust gas  
from the exit port and direct the exhaust gas through the exhaust passage.

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3. An airbag inflator diffusion system, as in claim 2, wherein the sleeve  
comprises a permeable section adjacent to the solid section and configured to allow  
exhaust gas to flow from the exit port through the exhaust passage to an area external to  
the sleeve.

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4. An airbag inflator diffusion system, as in claim 3, wherein the solid  
section is further configured to circumscribe the exit port.

5. An airbag inflator diffusion system, as in claim 3, wherein the permeable  
20 section is further configured to circumscribe a length of the inflator excluding the exit  
port.

6. An airbag inflator diffusion system, as in claim 4, wherein the sleeve comprises a plurality of solid sections and permeable sections and the airbag inflator comprises a plurality of exit ports.

5 7. An airbag inflator diffusion system, as in claim 6, wherein each solid section is positioned next to a permeable section.

8. An airbag inflator diffusion system, as in claim 7, wherein the sleeve is substantially cylindrical.

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9. An airbag inflator diffusion system, as in claim 8, wherein a first longitudinal edge of the sleeve overlaps a second longitudinal edge along a length of sleeve.

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10. An airbag inflator diffusion system, as in claim 9, wherein the sleeve is metallic.

11. An airbag inflator diffusion system, as in claim 1, wherein the sleeve is made from a flexible material.

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12. An airbag inflator diffusion system, as in claim 1, wherein the sleeve is rigid.

13. An airbag inflator diffusion system, as in claim 1, wherein the permeable  
5 section comprises a plurality of holes formed in the sleeve.

14. An airbag inflator diffusion system, as in claim 1, wherein the permeable  
section comprises a porous material configured to allow exhaust gas to pass through the  
sleeve.

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15. An airbag inflator diffusion system, as in claim 1, wherein a cross-  
sectional shape of the sleeve is substantially the same as the cross-sectional shape of the  
inflator.

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16. An airbag inflator diffuser comprising:

a tubular sleeve configured to expand radially to form an exhaust passage under a force of impinging exhaust gas from an exit port of an airbag inflator installed within the sleeve;

5 wherein the sleeve comprises a solid section positioned to impede a flow of exhaust gas from the exit port and direct the flow to the exhaust passage; and

wherein the sleeve comprises a permeable section positioned to allow exhaust gas to flow from the exit port through the exhaust passage and permeable section to an area external to the airbag inflator diffuser.

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17. An airbag inflator diffuser, as in claim 16, further comprising a plurality of holes disposed in the permeable section.

18. An airbag inflator diffuser, as in claim 16, further comprising a plurality of  
15 solid sections and a plurality of permeable sections.

19. An airbag inflator diffuser, as in claim 18, wherein the solid sections are positioned between permeable sections along a length of the sleeve.

20. An airbag inflator diffuser, as in claim 18, wherein the sleeve is formed from a blank rolled to form a substantially cylindrical shape and configured such that a first edge of the blank overlaps a second edge.

5 21. An airbag inflator diffuser, as in claim 20, wherein the blank is metal.

22. A method for fabricating an intra-airbag inflator diffuser, comprising:  
providing a planar rectangular blank;  
forming one or more permeable sections in the blank;  
rolling the blank such that a first edge of the blank overlaps a second edge to form  
5 a substantially cylindrical sleeve; and  
inserting an intra-airbag inflator longitudinally within the sleeve such that one or  
more exit ports of the inflator are obstructed by one or more solid sections of the sleeve.

23. A method as in claim 22, wherein the blank is made of pliable material of  
10 a thickness that allows an impingement force of exhaust gas from exit ports in the intra-  
airbag inflator to expand the sleeve radially to form an exhaust passage between the intra-  
airbag inflator and the sleeve.

24. A method as in claim 23, wherein forming one or more permeable sections  
15 comprises stamping the blank in a die configured to form one or more permeable sections  
along a length of the blank, the permeable sections being positioned such that solid  
sections configured to impinge one or more exit ports of the intra-airbag inflator are  
formed between the permeable sections.

25. A method as in claim 24, wherein a diameter of the sleeve is substantially the same as a diameter of the intra-airbag inflator to be inserted longitudinally within the sleeve.

5 26. A method as in claim 25, wherein the one or more permeable sections comprise one or more holes configured to allow exhaust gas to pass from the exhaust passage to an area external to the sleeve.

10 27. A method as in claim 26, wherein the one or more holes are further configured to catch gas generant residue carried by the exhaust gas.

15 28. A method as in claim 27, further comprising crimping each end of the sleeve to secure the intra-airbag inflator within the sleeve.